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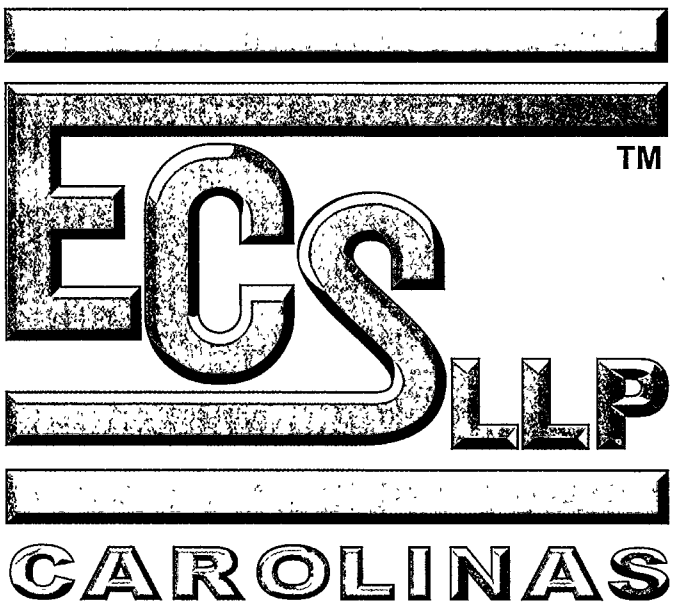

REC-LEAD

REMEDIAL INVESTIGATION WORK PLAN PHASE II ADDENDUM
2501, 2503, 2505, 2507 AND 2509 WRIGHTSVILLE AVENUE
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
SITE ID# NONCD0002799

ECS PROJECT NO. 22-13842D

PREPARED FOR

INVESTORS TRUST COMPANY
121 NORTH COLUMBIA STREET
CHAPEL HILL, NORTH CAROLINA 27514

FEBRUARY 23, 2010

ECS CAROLINAS, LLP

"Setting the Standard for Service"

Geotechnical • Construction Materials • Environmental • Facilities

February 23, 2010

Mr. Stephen E. Pike
Investors Trust Company
121 North Columbia Street
Chapel Hill, NC 27514

CD rcvd

Reference: Remedial Investigation Work Plan - Phase II Addendum
2501, 2503, 2505, 2507 and 2509 Wrightsville Avenue
Wilmington, New Hanover County, North Carolina
Site ID# NONCD0002799
ECS Project 22-13842D

Dear Mr. Pike:

ECS Carolinas, LLP (ECS) is pleased to provide this Work Plan Addendum for the above referenced site. Included in this Remedial Investigation Work Plan Addendum is a description of the field activities and procedures to be performed. ECS appreciates this opportunity to provide our services to you on this project. If you have any questions concerning this report or this project, please contact us at (910) 686-9114.

Sincerely,

ECS CAROLINAS, LLP

REC-LEAD

Amy C. Conchas, REM
Environmental Department Manager

Stephen Gosselin, P.G., RSM
Principal Geologist
NC Licensed Geologist #1445

NORTH CAROLINA LICENSED SEAL 1445 GEOLOGIST STEPHEN J GOSSELIN

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APPENDICES

A. Statement of Purpose

This Remedial Investigation Work Plan (RIWP) Addendum is intended only for the use of Investors Trust Company and for submission to the North Carolina Department of Environment and Natural Resources (NCDENR), Inactive Hazardous Sites Branch (IHSB), Registered Environmental Consultant (REC) Program. The contents should not be relied upon by other parties without the express written consent of ECS. The data and information presented are relevant to the dates of previous site work and should not be relied upon to represent site conditions on other dates. Our evaluation of site conditions and the formulation of this Work Plan are based on our understanding of the site and project information and the data provided to us or obtained in previous assessments. The primary objective was to prepare a RIWP to describe the activities involved with soil and groundwater sampling associated with the Phase II Remedial Investigation at the site. Due to the nature of subsurface assessments, conditions may vary from those anticipated in the preparation of this plan or the extent of impacted soil and/or groundwater may be greater than expected and additional assessment or remediation may be required.

B. Site History

The site is a vacant parcel located at 2501, 2503, 2505, 2507 and 2509 Wrightsville Avenue in Wilmington, New Hanover County, North Carolina (Figures 1, 2, and 3). ECS prepared a Phase I Environmental Site Assessment (ESA) on the site, dated March 31, 2008. Based on the historical review, the site has been occupied by a commercial building and a residential building since at least 1946 and was occupied by residential buildings in 1945. The commercial building has been occupied by a grocery until the mid 1950s, at which time, the building burned down and a new commercial building was constructed. The new commercial building appeared to have been occupied by a laundromat and grill from the 1960s though the 1990s, after which the building appeared to have been vacant. ECS did not identify information to suggest that dry cleaning operations were conducted at the laundromat. The listings for the building also included office space from the 1970s through the 1990s. A copy of the Phase I ESA is included in Appendix B.

As part of the ESA, ECS was requested to collect soil samples in the areas of the solvent odor observed by ECS and Mr. Jeff Macellaro with United Excavations during the building demolition activities. On March 14, 2008, ECS and Mr. Macellaro arrived on-site to collect samples in the area of the former solvent odor. Mr. Macellaro excavated approximately ten test pits in an attempt to locate the area of the former solvent odor. During the excavation activities, rusted metal containers and machine parts were encountered under the building foot print. ECS considered this debris to be a recognized environmental condition (REC) of the site. Additionally, an ash and coal layer was encountered approximately two to three feet below ground surface (bgs). Field screening of the soil for organic vapors using a photoionization detector did not indicate organic vapor readings above ambient background concentrations. Additionally, ECS was unable to locate areas of soil staining or noticeable odor. Therefore, ECS collected a composite sample from multiple test pits. The soil samples were analyzed for volatile and semi-volatile organic compounds (VOCs and SVOCs) using EPA Methods 8260 and 8270, respectively. The results of the analysis identified concentrations of SVOCs in the composite sample which exceeded its representative North Carolina risk-based soil-to-groundwater maximum soil contaminant concentration (MSCC).

ECS prepared a Phase I Remedial Investigation, dated May 29, 2009. The results of the investigation did not identify VOCs or metals in the soil samples at concentrations exceeding either the Protection

of Groundwater Soil Remediation Goals or the Health Based Soil Remediation Goals. Polycyclic aromatic hydrocarbons (PAHs) were identified in soil samples S-1 through S-4, which were located on the southern portion of the site, near the location of the former on-site buildings. These soil samples were collected from depths of four to six feet bgs. Benzo[a]pyrene and benzo[b]flouranthene were detected in soil sample S-2 at concentrations exceeding the Protection of Groundwater Soil Remediation Goals and/or the Health Based Soil Remediation Goals. Laboratory analysis of groundwater samples did not identify VOCs above the laboratory detection limit. Bis(2-ethylhexyl)phthalate was identified in sample TW-S-5 at a concentration of 1.9 ug/l, which is below the NCAC 2L groundwater standard of 2.5 ug/l. No other SVOCs were identified in the three groundwater samples. Arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, thallium and zinc were identified in the groundwater samples. The chromium and lead concentrations in samples TW-S-2 and TW-S-6 exceeded the NCAC 2L groundwater standard.

ECS prepared the Work Plan for the Phase II Investigation of the site in October 2009. The work plan included the installation of six additional borings in the vicinity of boring S-2. Two soil samples would be collected from each boring for laboratory analysis. One soil sample would be collected from the upper five feet of the soil boring and one sample will be collected from the lower five feet of the soil boring. The borings were analyzed for VOCs using EPA Method 8260, SVOCs using EPA Method 8270 plus 10 tentatively identified contaminants TICs and 13 Priority Pollutant Metals using EPA Method 6010. Additionally, two 2-inch diameter monitoring wells (MW-1 and MW-2) were proposed to be installed in the vicinity of previous temporary monitoring wells TW-S-2 and TW-S-6. The groundwater samples would be analyzed for SVOCs using EPA Method 8270 plus 10 TICs and 13 PP Metals using EPA method 6010.

The Phase II Investigation scope of work described in the work plan was performed in November 2009 with receipt of results in December 2009. The sampling identified concentrations of acetone, PAHs and metals in the soil samples. Additionally, concentrations of PAHs exceeded the remediation goals in each of the soil borings and arsenic exceeded the remediation goal in soil boring S8. The soil analytical results are summarized in Table 1, included as an attachment. The groundwater sampling did not identify VOCs in the two monitoring well samples; however, SVOCs and metals were identified in the samples, some of which exceeded the NCAC 2L groundwater standard. Based on the results of the first round of sampling for the Phase II Investigation, additional soil sampling would be required to define the area of impact. Additionally, additional groundwater sampling would be required to determine if the groundwater concentrations are due to turbidity or contamination.

ECS has prepared this RIWP Addendum in order to satisfy the requirements of the REC Program. Project information is based on conversations between Mr. Stephen Pike with Investors Trust Company and Ms. Amy Conchas with ECS.

C. Intended Procedures for Site Characterization *[.0306(g)(14)]* and Sample Collection Points [.0302(g)(15)]

This work plan outlines tasks to be completed for site characterization and the proposed sample collection points. Following acceptance of this work plan by the IHSB, ECS plans to complete the following tasks in order to characterization of site geologic and hydrogeologic conditions and identify each contamination source.

i. Activities Previously Proposed or Completed

ECS conducted a Phase I ESA at the site, which is included in Appendix B. ECS also conducted soil sampling at the site in connection with the Phase I ESA, the results of which are discussed in the above section. ECS previously conducted a Phase I Remedial Investigation, the results of which are also discussed in the above section.

ECS proposes to complete the following sections of the work plan below:

ii. Locate Underground Utilities

Prior to conducting activities at the site, ECS will notify North Carolina One-Call service to locate public utilities at the site. The site is currently a vacant lot with the former on-site buildings having been demolished. Therefore, a private utility locating contractor will not be contacted,

iii. Advance Soil Borings and Conduct Soil Sampling

ECS proposes to contract Subsurface Environmental Investigations, LLC (SEI) to advance approximately nine soil borings at the site using a Geoprobe. The borings will be advanced approximately 20 feet outside of the previously installed boring in an attempt to define the horizontal extent of the impacted soil. The soil borings will be advanced to an approximate depth of 10 feet below the ground surface (bgs) or to the static groundwater level, which ever is encountered first. Soil samples will be collected continuously from the ground surface to the boring termination depth. ECS personnel will classify and characterize the soil samples in the field and screen them for relative levels of volatile organic vapors using a PID/FID.

The soil borings annular space will be backfilled to the ground surface with hydrated bentonite pellets. Excess soil cuttings will be placed on and wrapped with plastic and left by the borehole pending sample analysis results.

Two soil samples will be collected from each boring for laboratory analysis. One soil sample will be collected from the upper half of the soil boring and one sample will be collected from the lower half of the soil boring. The soil sample for each interval will be selected based on the following criteria: 1) the soil sample exhibiting the highest reading on the PID/FID (>5 parts per million), 2) the soil sample with visual and/or olfactory indications of impact, or 3) at the discretion of ECS field personnel if none of the previous criteria are met.

One duplicate soil sample will be collected for quality control/assurance purposes.

The soil samples will be shipped to Environmental Conservation Laboratories, Inc. (ENCO) a State of North Carolina-certified laboratory and analyzed for VOCs using EPA Method 8260, PAHs using EPA Method 8270 and priority pollutant metals using EPA Method 6010.

The soil boring locations will be located by a North Carolina licensed surveyor and incorporated into site maps.

iv. Install Groundwater Monitoring Wells and Collect Groundwater Samples

Installation of additional monitoring wells is not proposed for this RIWP Addendum. However, the two on-site monitoring wells will be re-sampled. ECS will purge the monitoring wells on one day and will sample the monitoring wells the following day, in order to minimize turbidity. The groundwater samples will be submitted to a State of North Carolina-certified laboratory and analyzed for SVOCs using EPA Method 8270 plus 10 TICs and 13 PP Metals using EPA method 6010.

One duplicate groundwater sample will be collected for quality control/assurance purposes.

v. Conduct Groundwater Aquifer Testing

ECS will not conduct groundwater aquifer testing at this time.

vi. Professional Survey of Soil Borings and Monitor[sic] Wells

The proposed location of the soil borings were included in the survey plat provided in Appendix C. ECS has obtained the GIS coordinates of the boring locations from the Phase I Remedial Investigation, which are shown on the survey plat included in Appendix A. ECS will obtain GIS coordinates of future sample locations to incorporate on the survey plat.

vii. Dispose of Investigation-Derived Wastes (IDW)

ECS will containerize the IDW in properly labeled drums pending laboratory analysis. Disposal of the IDW will be determined based on the laboratory analysis results.

viii. Develop Remediation Goals

ECS does not propose remediation goals at this time. Based on the results of the assessment phase of work, additional sampling may be warranted and remediation goals may be developed.

ix. Interpret Data and Prepare Report

ECS will prepare a Phase II Remedial Investigation Report in accordance with §.0306 (g) of the *Implementation Guidance* document describing our activities, the results obtained and our conclusions and recommendations.

x. Qualifications of Consultants and Laboratory Personnel

ECS proposes to subcontract with the same North Carolina certified laboratory, ENCO. A personnel listing for ENCO is included in Appendix B.

D. Field and Lab Procedures *[.0302(g)(16)]*

i. Soil Sampling Procedures

Each soil sample collected by ECS will be a grab sample, i.e., no composite samples will be collected. The soil samples will be removed from the plastic sleeve of the geoprobe rod and placed directly in a new plastic gallon-size bag, in one foot increments. Based on the field observations and PID/FID readings one soil sample from each boring will be collected from the plastic bag indicating the greatest potential for contamination. The soil sample will be placed in laboratory provided containers using new, disposable nitrile gloves. The sample containers will be placed on ice for shipment to the laboratory.

ii. Monitoring Well Sampling Procedures

Purged groundwater will be placed in NCDOT 55-gallon steel drums for disposal. The monitoring wells will be purged by evacuating at least three well volumes using a disposable bailer at each well location. The following day, the groundwater samples will be collected using the disposable bailer for that well and dispensed into sample containers provided by the laboratory and placed on ice.

iii. Sample Submittal

The soil and groundwater samples will be placed in laboratory prepared containers using a new pair of disposable nitrile gloves for each sample. Each container will be labeled with the project name, sample location, presence or absence of preservative, and the date and time the samples were collected. The sample containers will be placed in a cooler containing ice to maintain the samples at approximately 4° Celsius. The samples will be shipped using Fed Ex to ENCO in Cary, North Carolina for chemical analysis. A *Chain of Custody Record* will be maintained and included with the analytical data.

iv. Quality Assurance/ Quality Control

Quality assurance and quality control (QA/QC) measures will be followed according to Appendix A of the REC Program Implementation Guidance.

E. Analytical Parameters and Methods *[.0302(g)(17)]*

The soil samples (estimate 19 samples, includes 1 duplicate sample) will be analyzed for VOCs using EPA Method 8260, PAHs using EPA Method 8270 and priority pollutant metals using EPA Method 6010

The groundwater samples (estimate 3, with 1 duplicate) will be analyzed for SVOCs using EPA Method 8270, plus ten TICs and 13 priority pollutant metals using EPA Method 6010.

F. Decontamination Procedures *[.0302(g)(18)]*

Decontamination procedures for equipment and personnel are included in the health and safety plan (HASP) provided by ECS in Appendix C.

G. Community Health and Safety Plan *[.0302(g)(19)]*

ECS has prepared a HASP for the site. The HASP will be reviewed prior to initiating site activities. The HASP includes provisions for community health and safety as well as workers and site visitors.

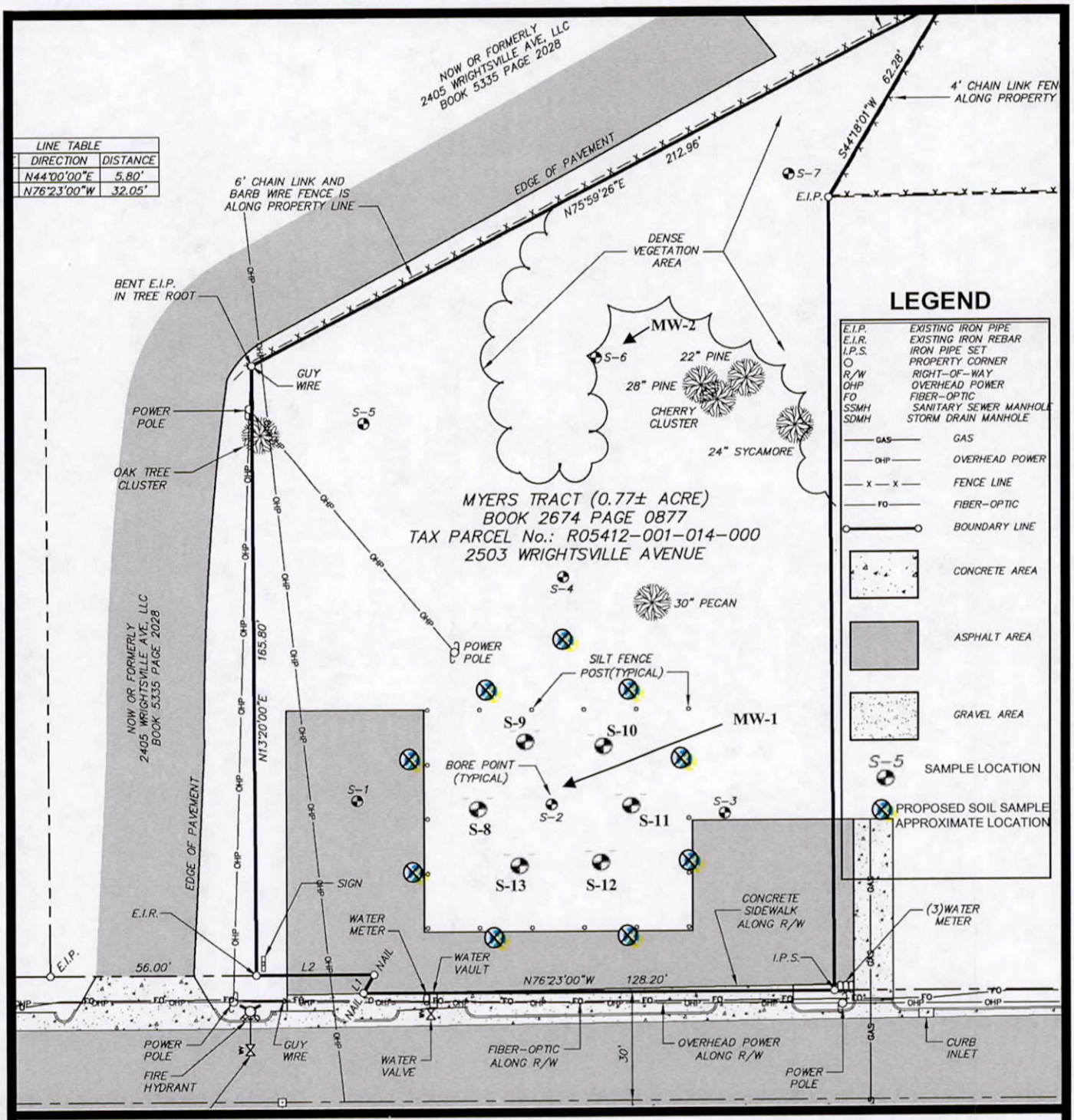
The *Site Health and Safety Plan* prepared by ECS is provided as Appendix C to this document.

H. Proposed Schedule

ECS proposes to perform and complete the stated field work in February 2010. The field work should require two days to complete. The sample analytical results should be available approximately one week after receipt of the samples by the laboratory. The written report will be submitted approximately fours weeks after receipt of the Phase II Remedial Investigation.

I. Certification

Certification documents propertied by the remediating party and the consultant Registered Site Manager are included as Appendix D.



Approximate Scale

1 inch = 40 feet

PROPOSED SAMPLE LOCATION MAP

Source: Site Survey, January 2008

N

Remedial Investigation Work Plan
2501, 2503, 2507 and 2509
Wrightsville Ave.
Wilmington, North Carolina

ECS LLP CAROLINAS

ECS Project No. 22-13842D
February 2010

Table 1
Summary of Soil Results
2501, 2503, 2505, 2507 and 2509 Wrightsville Avenue
Wilmington, New Hanover County, North Carolina
Site ID# NONCD0002799
ECS Project Number 22-13842D

	Analytical Method	S-1	S-1	S-2	S-3	S-4	S-5	Duplicate	S-6	S-7	S8-2-3	S8-6-7	Protection of Groundwater Soil Remediation Goals	Health Based Soil Remediation Goals
Grab / Composite		Composite	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab		
Depth		Composite	4ft.	4ft.	4 ft.	6ft.	10ft	10ft.	9ft.	3ft.	2-3 ft.	6-7 ft.		
Date		3/14/08	3/24/09	3/24/09	3/24/09	3/24/09	3/24/09	3/24/09	3/24/09	3/24/09	11/23/09	11/23/09		
Acetone	8260B	BDL	0.0065	BDL	0.0049	0.023	BDL	BDL	BDL	BDL	BDL	BDL	2.8	12,000
Acenaphthylene	8270C	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.041	BDL	27	No Standard
Benzo[a]anthracene	8270C	**0.355**	BDL	0.093	BDL	BDL	BDL	BDL	BDL	BDL	**0.17**	BDL	0.22	0.15
Benzo[a]pyrene	8270C	**0.402**	BDL	**0.14**	BDL	BDL	BDL	BDL	BDL	BDL	**0.21**	BDL	0.075	0.015
Benzo[b]fluoranthene	8270C	**0.620**	BDL	**0.22**	BDL	0.064	BDL	BDL	BDL	BDL	**0.34**	BDL	0.077	0.15
Benzo[g,h,i]perylene	8270C	BDL	BDL	0.11	BDL	0.040	BDL	BDL	BDL	BDL	0.15	BDL	11,000	No Standard
Benzo[k]fluoranthene	8270C	BDL	BDL	0.076	BDL	BDL	BDL	BDL	BDL	BDL	0.11	BDL	7.5	1.5
Chrysene	8270C	0.425	BDL	0.14	BDL	0.040	BDL	BDL	BDL	BDL	0.19	BDL	23	15
Dibenzo(a,h)anthracene	8270C	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.25	0.015
Fluoranthene	8270C	0.693	0.045	0.23	BDL	0.049	BDL	BDL	BDL	BDL	0.26	BDL	400	460
Indeno[1,2,3-cd]pyrene	8270C	BDL	BDL	0.10	BDL	BDL	BDL	BDL	BDL	BDL	0.12	BDL	2.6	0.15
Phenanthrene	8270C	BDL	BDL	0.055	BDL	BDL	BDL	BDL	BDL	BDL	0.081	BDL	88	No Standard
Pyrene	8270C	0.693	0.037	0.20	BDL	0.040	BDL	BDL	BDL	BDL	0.26	BDL	290	340
Antimony	6010B	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.537	BDL	No Standard	6.2
Arsenic	6010B	NA	0.30	3.01	BDL	0.42	BDL	<0.28	0.29	1.84	**12.2**	3.02	5.4	4.4
Beryllium	6010B	NA	0.017	0.055	0.010	0.027	0.021	0.015	0.018	0.041	0.196	0.0325	No Standard	32.0
Barium	6010B	NA	6.90	61.3	1.45	6.09	3.64	1.99	3.04	13.1	NA	NA	1,600	3,000
Cadmium	6010B	NA	0.042	0.404	BDL	0.112	BDL	BDL	BDL	BDL	0.157	0.011	2.6	14
Chromium	6010B	NA	2.97	6.46	1.05	7.55	3.07	1.89	3.83	11.4	5.09	7.01	No Standard	280
Copper	6010B	NA	0.729	9.71	0.182	2.13	0.228	0.095	0.290	0.949	10.8	1.12	700	630
Lead	6010B	NA	7.76	53.3	1.61	11.2	2.55	1.67	2.56	5.08	42.7	3.30	270	400
Nickel	6010B	NA	0.55	2.62	0.17	1.49	0.61	0.35	0.67	1.89	3.32	0.539	130	300
Selenium	6010B	NA	BDL	1.19	0.40	0.99	BDL	BDL	BDL	2.38	0.325	BDL	5.2	78
Silver	6010B	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	3.0	78
Thallium	6010B	NA	BDL	BDL	BDL	0.30	BDL	BDL	BDL	BDL	BDL	0.200	No Standard	1.0
Zinc	6010B	NA	13.2	196	BDL	13.7	2.06	NA	BDL	3.21	67.3	4.38	13,000	4,600
Mercury	7471A	NA	BDL	0.05	BDL	0.01	BDL	BDL	BDL	0.04	0.0352	0.0145	0.86	No Standard

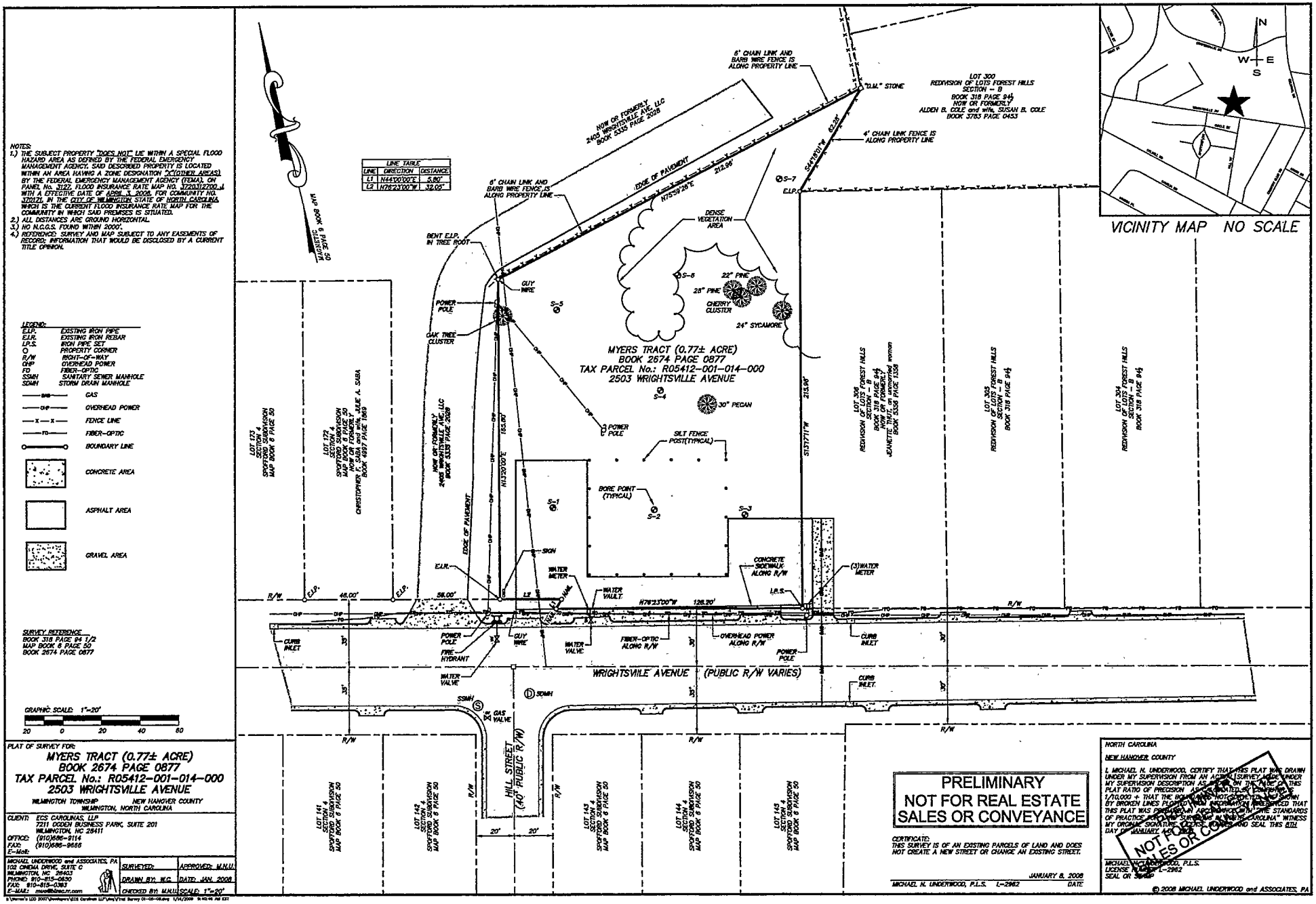
NA= Not Analyzed Concentrations in mg/kg MSCC = Maximum Soil Contaminant Concentration
* Inactive Hazardous Site Branch Protection of Groundwater Soil Remediation Goals

Table 1
Summary of Soil Results
2501, 2503, 2505, 2507 and 2509 Wrightsville Avenue
Wilmington, New Hanover County, North Carolina
Site ID# NONCD0002799
ECS Project Number 22-13842D

	S9-3-5	S9-5-6	S10-1-2	S10-5-6	S11-0-2	S11-6-7	S12-2-3	S12-6-7	S13-3-4	S13-6-7	Dup	Protection of Groundwater Soil Remediation Goals	Health Based Soil Remediation Goals
Grab / Composite	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab		
Depth	3-5ft	5-6ft.	1-2ft.	5-6ft.	0-2ft.	6-7ft.	2-3ft.	6-7ft.	3-4ft.	6-7ft.			
Date	11/23/09	11/23/09	11/23/09	11/23/09	11/23/09	11/23/09	11/23/09	11/23/09	11/23/09	11/23/09	11/23/09		
Acetone	BDL	BDL	0.016	0.0069	BDL	0.0059	BDL	BDL	BDL	BDL	BDL	2.8	12,000
Acenaphthylene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	27	No Standard
Benzo[a]anthracene	BDL	0.091	**17**	**0.68**	0.098	BDL	**0.17**	BDL	**0.25**	BDL	BDL	0.22	0.15
Benzo[a]pyrene	BDL	**0.093**	**19**	**0.75**	**0.080**	BDL	**0.21**	BDL	**0.32**	BDL	BDL	0.075	0.015
Benzo[b]fluoranthene	BDL	**0.12**	**26**	**1.0**	**0.12**	BDL	**0.35**	BDL	**0.50**	BDL	BDL	0.077	0.15
Benzo[g,h,i]perylene	BDL	0.053	12	0.48	0.049	BDL	0.14	BDL	0.16	BDL	BDL	11,000	No Standard
Benzo[k]fluoranthene	BDL	0.050	**9.1**	0.35	0.053	BDL	0.11	BDL	0.17	BDL	BDL	7.5	1.5
Chrysene	BDL	0.092	**15**	0.57	0.10	BDL	0.21	BDL	0.31	BDL	BDL	23	15
Dibenzo(a,h)anthracene	BDL	BDL	**2.9**	**0.10**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.25	0.015
Fluoranthene	BDL	0.17	30	1.2	0.25	BDL	0.37	BDL	0.51	BDL	BDL	400	460
Indeno[1,2,3-cd]pyrene	BDL	0.052	**10**	**0.42**	BDL	BDL	0.13	BDL	**0.15**	BDL	BDL	2.6	0.15
Phenanthrene	BDL	0.052	1.0	0.044	0.12	BDL	0.11	BDL	0.16	BDL	BDL	88	No Standard
Pyrene	BDL	0.16	31	1.1	0.22	BDL	0.32	BDL	0.41	BDL	BDL	290	340
Antimony	0.279	0.533	0.622	0.601	0.271	BDL	0.475	0.141	0.290	0.218	0.164	No Standard	6.2
Arsenic	1.18	1.87	0.864	0.799	1.61	0.435	3.12	0.619	1.17	1.32	0.873	5.4	4.4
Beryllium	BDL	0.0361	0.0413	0.0412	0.0483	BDL	0.0884	BDL	0.0433	0.0184	BDL	No Standard	32.0
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,600	3,000
Cadmium	BDL	0.0206	0.104	0.0126	BDL	0.0532	0.192	BDL	0.0948	BDL	BDL	2.6	14
Chromium	1.95	7.62	4.32	8.21	5.89	1.48	4.3	3.37	2.61	5.57	1.99	No Standard	280
Copper	0.591	2.72	8.29	3.66	2.26	BDL	13.3	0.311	3.11	0.785	0.543	700	630
Lead	1.69	15.6	76.4	19.4	23.4	1.34	53.8	3.03	28.6	3.09	1.84	270	400
Nickel	0.813	1.38	2.00	2.29	0.751	BDL	1.63	0.574	0.968	0.928	0.883	130	300
Selenium	0.300	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.135	0.208	5.2	78
Silver	BDL	BDL	0.167	0.188	BDL	BDL	BDL	BDL	BDL	BDL	BDL	3.000	78
Thallium	0.166	0.113	BDL	BDL	0.128	0.177	0.265	BDL	0.306	BDL	0.193	No Standard	1.0
Zinc	3.11	20.1	65.2	21.0	51.8	2.34	114	4.68	32.0	1.97	2.69	13,000	4,600
Mercury	0.0141	0.0252	0.163	0.0334	0.00955	BDL	0.0151	BDL	0.0156	BDL	0.0143	0.86	No Standard

NA= Not Analyzed Concentrations in mg/kg MSCC = Maximum Soil Contaminant Concentration
* Inactive Hazardous Site Branch Protection of Groundwater Soil Remediation Goals

APPENDIX A – SURVEY PLAT


NOTES:
1.) THE SUBJECT PROPERTY "DOES NOT" LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. SAID DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION "X"(OTHER AREAS) BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON PANEL No. 3127, FLOOD INSURANCE RATE MAP NO. 3720312700 J WITH A EFFECTIVE DATE OF APRIL 3, 2008, FOR COMMUNITY NO. 320121, IN THE CITY OF WILMINGTON STATE OF NORTH CAROLINA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED.
2.) ALL DISTANCES ARE GROUND HORIZONTAL.
3.) NO N.C.G.S. FOUND WITHIN 2000'.
4.) REFERENCE: SURVEY AND MAP SUBJECT TO ANY EASEMENTS OF RECORD; INFORMATION THAT WOULD BE DISCLOSED BY A CURRENT TITLE OPINION.
LEGEND:
E.I.P. EXISTING IRON PIPE
E.I.R. EXISTING IRON REBAR
I.P.S. IRON PIPE SET
PROPERTY CORNER
R/W RIGHT-OF-WAY
OHP OVERHEAD POWER
FO FIBER-OPTIC
SSMH SANITARY SEWER MANHOLE
SDMH STORM DRAIN MANHOLE
GAS
OVERHEAD POWER
FENCE LINE
FIBER-OPTIC
BOUNDARY LINE
CONCRETE AREA
ASPHALT AREA
GRAVEL AREA
SURVEY REFERENCE
BOOK 318 PAGE 94 1/2
MAP BOOK 6 PAGE 50
BOOK 2674 PAGE 0877
GRAPHIC SCALE: 1"=20'
20 0 20 40 60
LINE TABLE
LINE DIRECTION DISTANCE
L1 N44°00'00"E 5.80'
L2 N76°23'00"W 32.05'
MAP BOOK 6 PAGE 50 SUBDIVISION
6' CHAIN LINK AND BARB WIRE FENCE IS ALONG PROPERTY LINE
NOW OR FORMERLY 2403 WRIGHTSVILLE AVE, LLC BOOK 5335 PAGE 2028
"D.M." STONE
LOT 300 REDIVISION OF LOTS FOREST HILLS SECTION - B BOOK 318 PAGE 94 NOW OR FORMERLY ALDEN B. COLE and wife, SUSAN B. COLE BOOK 3783 PAGE 0453
4' CHAIN LINK FENCE IS ALONG PROPERTY LINE
S41°16'01"W 62.26'
EDGE OF PAVEMENT
N75°59'28"E 213.56'
E.I.P.
S-7
DENSE VEGETATION AREA
BENT E.I.P. IN TREE ROOT
GUY WIRE
POWER POLE
OAK TREE CLUSTER
S-5
S-6
22" PINE
28" PINE
CHERRY CLUSTER
24" SYCAMORE
MYERS TRACT (0.77± ACRE)
BOOK 2674 PAGE 0877
TAX PARCEL No.: R05412-001-014-000
2503 WRIGHTSVILLE AVENUE
S-4
30" PECAN
SILT FENCE POST(TYPICAL)
BORE POINT (TYPICAL)
S-1
S-2
S-3
LOT 173 SECTION 4 SPOTFORD SUBDIVISION MAP BOOK 6 PAGE 50
LOT 172 SECTION 4 SPOTFORD SUBDIVISION MAP BOOK 6 PAGE 50 NOW OR FORMERLY CHRISTOPHER F. SABA and wife, JULIE A. SABA BOOK 4997 PAGE 1865
NOW OR FORMERLY 2405 WRIGHTSVILLE AVE, LLC BOOK 5335 PAGE 2028
EDGE OF PAVEMENT
LOT 306 REDIVISION OF LOTS FOREST HILLS SECTION - B BOOK 318 PAGE 94 NOW OR FORMERLY JEANETTE TRUIT, an unmarried woman BOOK 5358 PAGE 1358
LOT 305 REDIVISION OF LOTS FOREST HILLS SECTION - B BOOK 318 PAGE 94
LOT 304 REDIVISION OF LOTS FOREST HILLS SECTION - B BOOK 318 PAGE 94
S17°37'17"W 215.96'
N13°20'00"E 165.00'
E.I.R.
SIGN
WATER METER
WATER VAULT
CONCRETE SIDEWALK ALONG R/W
(3) WATER METER
I.P.S.
N76°23'00"W 126.20'
R/W
E.I.P.
46.00'
56.00'
L2
CURB INLET
POWER POLE
GUY WIRE
FIRE HYDRANT
WATER VALVE
FIBER-OPTIC ALONG R/W
OVERHEAD POWER ALONG R/W
CURB INLET
WRIGHTSVILLE AVENUE (PUBLIC R/W VARIES)
SSMH
GAS VALVE
HILL STREET (40' PUBLIC R/W)
20'
20'
LOT 141 SECTION 4 SPOTFORD SUBDIVISION MAP BOOK 6 PAGE 50
LOT 142 SECTION 4 SPOTFORD SUBDIVISION MAP BOOK 6 PAGE 50
LOT 143 SECTION 4 SPOTFORD SUBDIVISION MAP BOOK 6 PAGE 50
LOT 144 SECTION 4 SPOTFORD SUBDIVISION MAP BOOK 6 PAGE 50
LOT 145 SECTION 4 SPOTFORD SUBDIVISION MAP BOOK 6 PAGE 50
VICINITY MAP NO SCALE
N
W E
S
PRELIMINARY
NOT FOR REAL ESTATE
SALES OR CONVEYANCE
CERTIFICATE:
THIS SURVEY IS OF AN EXISTING PARCELS OF LAND AND DOES NOT CREATE A NEW STREET OR CHANGE AN EXISTING STREET.
JANUARY 8, 2008
MICHAEL N. UNDERWOOD, P.L.S. L-2962 DATE
NORTH CAROLINA
NEW HANOVER COUNTY
I, MICHAEL N. UNDERWOOD, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION DESCRIPTION AS SHOWN ON THE FACE OF THIS PLAT RATIO OF PRECISION AS CALCULATED IS 1/10,000 + THAT THE BOUNDARIES NOT SURVEYED ARE SHOWN BY BROKEN LINES PLOTTED FROM INFORMATION FOUND IN BOOK AS STATED. WITNESS THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER AND SEAL THIS 8TH DAY OF JANUARY, A.D., 2008.
NOT TO BE USED FOR CONVEYANCES
MICHAEL N. UNDERWOOD, P.L.S.
LICENSE NUMBER L-2962
SEAL OR STAMP
PLAT OF SURVEY FOR:
MYERS TRACT (0.77± ACRE)
BOOK 2674 PAGE 0877
TAX PARCEL No.: R05412-001-014-000
2503 WRIGHTSVILLE AVENUE
WILMINGTON TOWNSHIP NEW HANOVER COUNTY
WILMINGTON, NORTH CAROLINA
CLIENT: ECS CAROLINAS, LLP
7211 ODDEN BUSINESS PARK, SUITE 201
WILMINGTON, NC 28411
OFFICE: (910)686-9114
FAX: (910)686-9655
E-Mail:
MICHAEL UNDERWOOD and ASSOCIATES, PA
102 CINEMA DRIVE, SUITE C
WILMINGTON, NC 28403
PHONE: 910-815-0830
FAX: 910-815-0383
E-MAIL: mike@bellsouth.net
SURVEYED: APPROVED: M.N.U.
DRAWN BY: W.C. DATE: JAN. 2008
CHECKED BY: M.N.U. SCALE: 1"=20'
© 2008 MICHAEL UNDERWOOD and ASSOCIATES, PA

APPENDIX B – ENVIRONMENTAL CONSERVATION LABORATORIES INC. LIST

Proposed Laboratory Team

Department	Member/Role	Degree(s)	Years Lab Experience
Admin	Stephanie Franz/Project Manager	BS- Chemistry	13
Admin	Rachel Anderson/QA Manager	BA-Chemistry	20
Admin	Rich Detar/Lab Manager	BS-Chemistry	17
Organics	Ron Fertile/Organics Manager	BA-Microbiology	11
Organics	Justin Guenzler/Analyst	BS-Chemistry	7
Organics	David Morse/Analyst	AAS-Environmental Sci.	22
Organics	Nkem Ukpabi/Prep Analyst	BS-Biology	8
Organics	Belinda Royall/Prep Analyst	N/A	14
Metals	John Halpin/Metals Manager	BS-Environmental Sci.	12
Metals	Valerie Obremski/Analyst	BS-Biology	17
Metals	Nicole Humphreys/Analyst	BS-Environmental Eng.	2

APPENDIX C – HEALTH AND SAFETY PLAN

ECS Site-Specific Health, Safety and Accident Prevention Plan

GENERAL INFORMATION

Client/Site Name:	Stephen Pike with Investors Trust Company / Wrightsville Avenue REC Site
Site Address:	2501, 2503, 2505, 2507 and 2509 Wrightsville Avenue Wilmington, New Hanover County, North Carolina
Job/Project #:	22-13842 D
Estimated Start Date:	February 2010
Estimated Completion Date:	March 2010

EMERGENCY INFORMATION

Phone Numbers:	Hospital #:	(910)343-7000	Ambulance #:	911
	Fire #:	911	Police #:	911
Hospital Name & Address:	New Hanover Regional Medical Center 2131 S. 17th Street, Wilmington, North Carolina			

Directions and Street Map of Route to Nearest Hospital Attached: ☒ Yes ☐ No (if no, do not proceed)

Other Emergency Contact:	Kris Stamm (ECS – Wilm. Safety Officer)	Phone #:	(910) 520-9692
Location of Nearest Phone:	Adjacent properties		

Have Necessary Underground Utility Notifications for Subsurface Work Been Made? ☒ Yes ☐ Not Applicable

Specify Clearance Date & Time, Dig Safe Clearance I.D. #, And Other Relevant Information:

Multiple dates, depends on specific work. Utility Clearance Forms are attached

SCOPE OF WORK

Site Description:	Vacant lot previously occupied by a multi-tenant commercial building and duplex. Prior to that, the property was occupied by a general store and residential buildings.
Specific Tasks Performed by ECS:	ECS will install soil borings using a geoprobe to collect soil samples and install groundwater monitoring wells to perform the site assessment
Concurrent Tasks to be Performed by ECS Subcontractors (List Subcontractors by Name):	Subsurface Environmental Investigation (SEI)
Concurrent Tasks to be Performed by Others:	None a this time

Does this project include confined space entry? ☐ yes ☒ no

ROLES AND RESPONSIBILITIES:

ECS ON-SITE PERSONNEL

Name	Project Title/Assigned Role	Telephone Numbers
Amy Conchas	Project Scientist/Site Supervisor	work: (910) 686-9114 home: (910) 794-2919
Amy Conchas	Project Scientist/Site Safety Officer/Competent Person	work: (910) 686-9114 home: (910) 794-2919

Site Supervisors and Project Managers (SS/PM): Responsibility for compliance with ECS Health and Safety programs, policies, procedures and applicable laws and regulations is shared by all ECS management and supervisory personnel. This includes the need for effective oversight and supervision of project staff necessary to control the Health and Safety aspects of ECS on-site activities.

Site Safety Officers and Competent Persons (SSO/CP): The Site Safety Officer (SSO) or "Competent Person", as defined by OSHA 1926.20(b) - Accident Prevention Responsibilities, is the individual "who is capable of identifying existing and predictable hazards in surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them." The SSO is designated on a site-by-site basis based on the site conditions, scope-of-work, and the individual's ability to recognize site-specific hazards and take appropriate corrective actions. This individual is responsible to both project management and the designated HSC with regard to the completion of these assigned duties.

Staff: Ultimate control of Health and Safety is in the hands of each individual employee. Therefore, each employee must become familiar with and comply with all Health and Safety requirements associated with their position and daily operations. Employees also have the responsibility to notify the appropriate management, SSO and HSC of unsafe conditions and accidents/injuries immediately. When employees are issued respirators or any other personal protective equipment (PPE), they are responsible for ensuring that said items are used properly, cleaned as required and maintained in good working order.

(Sub)contractors: (Sub)contractors must develop their own accident prevention plan related to their specific on-site activities. Subcontractors may use ECS's plan as an informational model. However, each Subcontractor is responsible for determining the plan's adequacy and applicability to its own activities on site. Subcontractors must deliver their plan in clear written form to ECS prior to the initiation of on-site activities.

OTHER PROJECT PERSONNEL:

Name	Project Title/Assigned Role	Telephone Numbers
Stephen Gosselin	Associate/Principal-in-Charge	Work: (704) 525-5152 Home:
Amy Conchas	Project Manager	work: (910) 686-9114 home: (910) 794-2919
Kris Stamm	Health and Safety Coordinator (HSC)	Work: (910) 686-9114 Home: (910) 973-1395

PLAN ACKNOWLEDGMENT AND APPROVALS

Approval or Acknowledgment	SSO/CP	SS/PM	AIC/PIC	HSC
Probable hazards identified on form.		X		X
Project scope accurately reflected on form.		X	X	
Appropriate emergency response information identified on form.		X		X
Appropriate control measures identified on form.		X		X
Hazards and control measures to be implemented on site acknowledged.	X	X	X	
Overall project scope and health and safety requirements acknowledged.	X	X	X	

DOCUMENTATION TO BE COMPLETED ON SITE

- A **Site Inspection Log** (page 11) must be completed at the initiation of on-site activities and at least once per week thereafter until the completion of ECS on-site activities.
- A **Site Health and Safety Briefing/ Site Orientation Record** (page 12) must be completed at the initiation of on-site activities and at least once per week thereafter until the completion of ECS on-site activities. (Note: The actual briefing may be conducted off site, in the office for example, if conditions preclude or render impractical its completion on site.)
- The **Subcontractor's Statement of Understanding Regarding Health and Safety Responsibilities** (page 13) and the **ECS Incident Report and/or Discovery of a Potential Hazard** (page 14) are to be completed on an as needed basis.

EQUIPMENT AND CONTROLS

Monitoring Equipment [1]	**Personal Protective Equipment**
☐ PID Type: Lamp Energy: eV	☐ Respirator Type:
☒ FID Type:	☐ Resp-Cartridge Type:
☐ Cal gas and equipment type:	☒ Hearing Protection
☐ LEL/O_2 Meter	☒ Hardhat
☐ Others:	☐ Outer Gloves Type:
	☐ Inner Gloves Type:
Other Equipment & Gear [2]	☒ Steel-toed boots/shoes
☒ 10# ABC Fire Extinguisher when gasoline powered equipment is present	☐ Coveralls Type:
☐ Caution Tape	☐ Outer Boots Type:
☐ Traffic Cones or Stanchions	☒ Eye Protection with side shields
☐ Warning Signs or Placards	☐ Traffic Vest
☒ Decon Buckets, Brushes, Detergent, Towels and Plastic Bags	☐ Personal Flotation Device (PFD)
☐ Others:	Others:

1. All direct reading instruments must be referenced on site at least twice/day (pre- and postsampling) using a cal-gas reference standard and in accordance with the manufacturer's instructions. Monitoring using direct reading instruments should be continuous while there is disturbance of material (e.g. soil).

2. A 15- to 25-foot exclusion zone is required wherever necessary to control access to heavy equipment and/or hazardous exposure situations.

AIR MONITORING INSTRUMENTS AND ACTION LEVELS:

Anticipated Chemical Hazards: PAHS

Organic Vapor Detector H-Nu, OVM, OVA (if required) - Breathing Zone Readings (will be completed by HSC):

_____ to _____ units	Remain in Level D. Use colorimetric tubes or other chemical specific device to verify low PEL contaminant levels do not contain another similar toxic materials (Benzene, Vinyl Chloride, etc.) where applicable. Cease work and consult with DHSC if levels of benzene or vinyl chloride exceed 1/2 ppm on a sustained basis.
_____to_____ units	Withdraw from work area and contact Project Management. Proceed to Level C protection for re-entry, or discontinue operation
>_____ units	Secure operations, withdraw from work area, and discontinue work at that location until contaminants can be evaluated, and detailed (SSHP) plan implemented.

Combustible Gas Indicator CGI/LEL Meter (if required) - Readings Near Vapor Source:

• < 10% LEL:	Continue to monitor with caution. Eliminate all ignition sources.
• 10% to 20% LEL:	Stop operations until appropriate vapor control measures (i e. foam, sand, polyethylene, film, portable blower etc.) and resample before resuming activity.
• > 20% LEL:	Stop operations and withdraw from area. Contact DHSC before proceeding.

HAZARD ASSESSMENT

Enter **X** *(applies, or required item(s) available) or* **leave blank** *(not applicable)*

HAZARD ASSESSMENT: PHYSICAL HAZARDS AND RELATED CONCERNS

☐ **Confined Space Entry (CSE).** Confined space entry means the *potentially hazardous* entry into any space which, by design, has limited openings for entry and exit, unfavorable natural ventilation which could contain or produce dangerous air contaminants, and which is not intended for continuous employee occupancy. Confined spaces include but are not limited to storage tanks, compartments of ships, process vessels, pits, silos, vats, degreasers, reaction vessels, boilers, ventilation and exhaust ducts, sewers, tunnels, underground utility vaults, and pipelines. Other environments which must be treated as confined spaces include *test pits, and basements, garages, warehouses and other indoor areas where mechanical (i.e., diesel, propane, gasoline or similarly powered) equipment must be operated for drilling or test pitting purposes.* Confined space entry should be allowed only when absolutely necessary, and then only when all requirements of ECS's Confined Space Entry Control Program, and/or CSE Program Supplement for Indoor Drilling (and Similar Operations) and/or Trench and Excavation Safety and Health Guide (and CSE Program Supplement), contained in the Health and Safety Program Manual, have been satisfied.

☒ **Construction Hazards, Drill Rigs, Backhoes, etc.** The use of drill rigs, backhoes and other heavy equipment represent potentially serious construction hazards. Whenever such equipment is used, personnel in the vicinity should be limited to those who must be there to complete their assigned duties. All personnel must avoid standing within the turning radius of the equipment or below any suspended load. Job sites must be kept as clean, orderly and sanitary as possible. When water is used, care must be taken to avoid creating muddy or slippery conditions. If slippery conditions are unavoidable, barriers and warning signs must be used to warn of these dangers.

Never turn your back to operating machinery. Never wear loose clothing, jewelry, hair or other personal items around rotating equipment or other equipment that could may catch or ensnare loose clothing, jewelry, hair or other personal items. Always stand far enough away from operating machinery to prevent accident contact which may result from mechanical or human error.

Additionally, the following basic personal protective measures must be observed: **Hardhats** must be worn to protect against bumps or falling objects. **Safety glasses** must be worn by all workers in the vicinity of drill rigs or other sources of flying objects. Goggles, face shields or other forms of eye protection must be worn when necessary to protect against chemicals or other hazards. **Steel-toed safety shoes or boots** are also required. The shoes must be chemically resistant or protected with appropriately selected boots/coverings where necessary. Unless otherwise specified, normal **workclothes** must be worn. Long sleeves and gloves are also required whenever necessary to protect against hazardous contact, cuts, abrasions or other possible skin hazards.

☐ **Electrical.** OSHA regulations require that employees who may be exposed to electrical equipment be trained to recognize the associated hazards and the appropriate control methods. All **extension cords** used for portable tools or other equipment must be designed for hard or extra usage and be (three-wire) grounded. All 120-volt, single-phase 15- and 20-ampere receptacle outlets on construction sites, and other locations where moisture/water contact may occur, must be equipped with **ground-fault circuit interrupters (GFCI)** units. GFCI units must be attached directly to or as close as possible to the receptacle. GFCI located away from the receptacle will not protect any wiring between the receptacle and the GFCI unit. Only the wiring plugged into the GFCI and outward will be protected by the GFCI. All **(temporary lighting)** lamps for general illumination must be protected from accidental breakage. Metal case sockets must be grounded. Portable lighting in wet or conductive locations should be 12 volts or less.

☐ **Drums and Buried Drums.** As a precautionary measure, personnel must assume that *labeled* and *unlabeled drums* encountered during field activities contain hazardous materials until their contents can be confirmed and characterized. Personnel should recognize that drums are frequently mislabeled, particularly drums that are reused.

Only trained and authorized personnel should be allowed to perform drum handling. Prior to any handling, drums must be visually inspected to gain as much information as possible about their contents. Trained field personnel must look for signs of deterioration such as corrosion, rust or leaks, and for signs that the drum is under pressure such as swelling or bulging. Drum-type and drumhead configuration may provide the observer with information about the type of material inside, (i.e., a removable lid is designed to contain solids, while the presence of a bung indicates liquid storage).

Although not usually anticipated, buried drums can be encountered when digging test pits. Therefore, the following provisions must be observed if drums are encountered. Machine excavation (i.e., backhoe) should cease immediately anytime a drum is encountered. The appropriate management personnel should be notified immediately. All ECS personnel should be instructed to immediately leave the work area.

Even authorized personnel must not enter an excavation where drums have been uncovered, even for monitoring purposes, unless all provisions of OSHA's trenching and excavation standard have been met and the appropriate level of personal protective equipment (PPE) is utilized. Sampling of unknown drums usually requires Level B protection. Buried drums must not be moved unless it can be accomplished in a safe manner and overpack drums are available.

☒ **Fire and Explosion.** The possibility of flammable materials being encountered during field activities must be recognized and the appropriate steps necessary to minimize fire and explosion must be observed. This includes situations where *excessive organic vapors, free product or methane* are, or may be, encountered. When this occurs, monitoring with a combustible gas indicator (CGI), is required.

In situations where hexane, methanol are needed for field activities, the following precautions must be observed: keep flammable and combustible materials away from heat, sparks and open flames; do not smoke around flammable or combustible materials; provide an ABC rated fire extinguisher appropriate for the materials present, and keep all flammable and combustible liquids in approved and properly labeled safety containers.

☐ **Landfill/Methane Hazards.** Fire and explosion should be regarded as one of, if not the, most significant potential hazards associated with drilling operations and other intrusive work conducted at a landfill. Accordingly, all sources of ignition must be fully controlled. Failure to control ignition sources could result in fire, explosion and pose a serious threat to life and health. Control methods may include forced ventilation and/or filling the borehole with enough water to inhibit the release of methane and other gases which would otherwise escape through the top of the borehole.

If forced (mechanical) ventilation is to be used, all such equipment must be approved for Class I, Division I hazardous atmospheres. The blower must be positioned to blow across the top of the borehole so that gases and vapors may be diluted as they exit the borehole. Do not attempt to suck out the gases or vapors. Blowers, all other mechanical equipment, and tools which could release sparks or static electricity must be bonded and grounded.

Regardless of the gas/vapor control method used, the atmosphere surrounding the borehole must be frequently monitored using direct reading instruments approved for Class I, Division I hazardous atmospheres. Monitoring should be conducted within 1 to 2 feet of the top of the borehole. Do not insert sampling devices into the borehole. The use of tubing connected to a remote instrument is recommended. Never approach the auger or drill shaft while it is in operation. Always notify the operator when about to take a reading.

Regardless of actual instrument readings, if all sources of ignition can not be controlled, operations should be immediately shut down if readings equal or exceed 10% of LEL and the area evacuated until ignition sources have been eliminated. Ignition sources include, but are not limited to: smoking, static electricity, lighting, open flames, spontaneously ignitable substances, frictional heat or sparks, hot surfaces, radiant heat, electrical sparks, stray currents, cutting and welding, and ovens, furnaces and heating equipment.

☒ **Heat and Cold Stress.** Overexposure to temperature extremes can represent significant risks to personnel if simple precautions are not observed. Typical control measures designed to prevent **heat stress** include dressing properly, drinking plenty of the right fluids, and establishing an appropriate work/break regimen. Typical control measures designed to prevent **cold stress** also include dressing properly, and establishing an appropriate work/break regimen. The project manager must assure that the appropriate provisions of **ECS's Heat and Cold Stress Control Program** contained in the Health and Safety Program Manual are observed.

☐ **Moving Vehicles, Traffic Safety.** All vehicular traffic routes which could impact worker safety must be identified and communicated. Whenever necessary, barriers or other methods must be established to prevent injury from moving vehicles. Traffic vests must be worn by personnel working near moving vehicular traffic. This is particularly important when field activities are conducted in parking lots, driveways, ramps or roadways. OSHA 1926.201 specifies that when signs, signals or barricades do not provide adequate protection from highway or street traffic, flagmen must be utilized. *Flagmen must wear red or orange garments. Garments worn at night must be reflective.*

☒ **Noise.** Noise exposure can be affected by many factors including the number and types of noise sources (continuous vs. intermittent or impact), and the proximity to noise intensifying structures such as walls or buildings which cause noise to bounce back or echo. The single most important factor effecting total noise exposure is distance from the source. The closer one is to the source the louder the noise. The operation of a drill rig, backhoe or other mechanical equipment can be sources of significant noise exposure. In order to reduce the exposure to this noise, personnel working in areas of excessive noise must use hearing protectors (ear plugs or ear muffs) in accordance with the **ECS Hearing Conservation Program** contained in the Health and Safety Program Manual.

Rule-of-Thumb: Wherever actual data from sound level meters or noise dosimeters is unavailable and it is necessary to raise one's voice above a normal conversational level to communicate with others within 3 to 5 feet away, hearing protection should be worn.

☒ **Overhead Utilities and Hazards.** Overhead hazards can include low hanging structures which can cause injury due to bumping into them. Other overhead hazards include *falling objects, suspended loads, swinging loads and rotating equipment.* Hardhats must be worn by personnel in areas were these types of physical hazards may be encountered. Barriers or other methods must also be used to exclude personnel from these areas were appropriate. Electrical wires are another significant overhead hazard. According to OSHA (29 CFR 1926.550), *the minimum clearance which must be maintained from overhead electrical wires is 10 feet* from an electrical source rated $\leq$ 50 kV. Sources rated > 50 kV require a minimum clearance of 10 feet plus 0.4 inch per kV above 50 kV.

☐ **Pedestrian Traffic.** The uncontrolled presence of pedestrians on a drilling or excavation site can be hazardous to both pedestrians and site workers. Prior to the initiation of site activities, the site should be surveyed to determine if, when and where pedestrian may gain access. This includes walkways, parking lots, gates and doorways. Barriers or caution tape should be used to exclude all pedestrian traffic. *Exclusion of pedestrian traffic is intended to prevent injury to the pedestrians and eliminate distractions which could cause injury to ECS personnel or other site workers.*

☐ **Test Pit and/or other Excavations.** All provisions of the OSHA trenching and excavation standard (29 CFR 1926.650-652) and **ECS's Trench and Excavation Safety and Health Guide (and CSE Program Supplement)** contained in the Health and Safety Manual must be followed during excavation activities. This includes *all test pit excavation and sampling activities.* The estimated location of utility installations, such as sewer, telephone, electric, water lines and other underground installations that may reasonably be expected to be encountered during excavation work, must be determined prior to opening an excavation.

Excavations in contaminated or potentially contaminated areas must be tested for confined spaces atmospheric hazards prior to entry. Excavations should not be entered if other means are available to perform the task requiring entry. If entry into an excavation is required, the atmosphere within the space must be monitored by a trained person to assure that oxygen concentrations are at greater than or equal to 19.5 percent, that combustible gas levels are less than 10 percent, and that vapor levels are within applicable safe exposure (PEL and TLV) limits.

A ladder or similar means of egress must be located in excavations greater than 4 feet in depth so as to require no more than 25 feet of lateral travel for employees. *No person should be allowed to enter an excavation in type B or C soil greater than 5 feet in depth unless the walls of the excavation have been protected using an approved shield (trench box), an approved shoring system, or the walls have been sloped back to an angle of 34 degrees, the excavation is free of accumulated water, and the excavation has been tested for hazardous atmospheres* as noted previously. If personnel enter an excavation, the spoils pile and all materials must be placed at least 2 feet from the edge of the excavation to prevent the materials from rolling into the excavation. *Personnel must remain at least 2 feet away from the edge of the excavation at all times.* Upon completion of a test pit exploration, the excavation should be backfilled and graded. Excavation should never be left open unless absolutely necessary, and then only with proper barricading and controls to prevent accidental injury.

☒ **Underground Utilities and Hazards.** The identification of underground storage tanks (USTs), pipes, utilities and other underground hazards is critically important prior to all drilling, excavating and other intrusive activities. In accordance with OSHA 29 CFR 1926.650, *the estimated location of utility installations, such as sewer, telephone, electric, water lines and other underground installations that may reasonably be expected to be encountered* during excavation work, *must be determined* prior to opening an excavation. The same requirements apply to drilling operations and the use of soil-gas probes. Where public utilities may exist, the utility agencies or operators must be contacted directly or through a utility-sponsored service such as *Dig-Safe.* Where other underground hazards may exist, reasonable attempts must be made to identify their locations as well. *Failure to identify underground hazards can lead to fire, explosion, flooding, electrocution or other life threatening accidents.*

☐ **Water Hazards and Boat Sampling.** The collection of water or sediment samples on or immediately adjacent to a body of water can pose significant hazards. In addition to the slip, trip and fall hazards associated with wet surfaces, the potential for drowning accidents must be recognized. These hazards can be intensified by the use of some personnel protective equipment (PPE), particularly if respiratory protection is worn. OSHA 29 CFR 1926.106 requires that all employees working over or near water, where the danger of drowning exists, *must wear a U.S. Coast Guard-approved life jacket or buoyant work vest.* Ring buoys and emergency *standby personnel* must also be in place.

HAZARD ASSESSMENT: CHEMICAL HAZARDS AND RELATED CONCERNS

☒ **Chemicals Subject to OSHA Hazard Communication.** All chemicals used in field activities such as solvents, reagents, decontamination solutions, or any other hazardous chemical must be listed and accompanied by the required labels, Material Safety Data Sheets (MSDS), and employee training documentation (OSHA 1910.1200). For additional information refer to **ECS's Hazard Communication Program** contained in the Health and Safety Program manual.

☐ **Asbestos.** Disturbance of building materials in buildings built prior to 1980 must be evaluated for the presence of asbestos-containing materials by an accredited ECS inspector. The inspection and/or removal of asbestos-based or asbestos-containing building materials is regulated by some major cities and several states. Regulations require individuals who conduct building inspections for the presence of asbestos or collect samples of asbestos containing materials to be licensed or certified. ECS employees must determine the applicability of these regulations prior to any activities involving asbestos. The primary health effects of asbestos exposure include asbestosis (a scarring of the lungs), lung cancer, mesothelioma and other forms of cancer. Exposure to asbestos is regulated by a comprehensive OSHA standard (29 CFR 1910.1001).

☐ **BTEX Compounds.** Exposure to the vapors of **benzene, ethyl benzene, toluene** and **xylenes** above their respective permissible exposure limits (PELs), as defined by the Occupational Safety and Health Administration (OSHA), may produce irritation of the mucous membranes of the upper respiratory tract, nose and mouth. Overexposure may also result in the depression of the central nervous system. Symptoms of such exposure include drowsiness, headache, fatigue and drunken-like behavior. Benzene has been determined to be carcinogenic, targeting blood-forming organs and bone marrow. The odor threshold for benzene is higher than the PEL and employees may be overexposed to benzene without sensing its presence, therefore, detector tubes must be utilized to evaluate airborne concentrations.

The vapor pressures of these compounds are high enough to generate significant quantities of airborne vapor. On sites where high concentrations of these compounds are present, a potential inhalation hazard to the field team during subsurface investigations can result. However, if the site is open and the anticipated quantities of BTEX contamination are small (i.e., part per million concentrations in the soil or groundwater), overexposure potential will also be small.

☐ **Carbon Monoxide.** Carbon monoxide (CO) is a gas usually formed by the incomplete combustion of various fuels. Welding, cutting and the operation internal combustion engines can produce significant quantities of CO. Amounts of CO can quickly rise to hazardous levels in poorly ventilated areas. CO is odorless and colorless. It cannot be detected without appropriate monitoring equipment. LEL/O_2 meters and H-Nu/photoionizing detectors are not appropriate for the detection of CO. A direct reading instrument, calibrated for CO, should be used. Common symptoms of overexposure include pounding of the heart, a dull headache, flashes before the eyes, dizziness, ringing in the ears and nausea. These symptoms must not be relied upon in place of an appropriately calibrated monitoring instrument. Exposures should not exceed 15 ppm. Exposures above 15 ppm require the use of supplied air respirators. Air purifying respirators are not approved for protection against CO.

☐ **Chlorinated Organic Compounds.** Exposure to the vapors of many chlorinated organic compounds such as vinyl chloride, tetrachloroethylene, 1,1,1-trichloroethane, trichloroethylene and 1,2-dichloroethylene above their respective permissible exposure limits (PELs) will result in similar symptoms. The actual PELs as set by the Occupational Safety and Health Administration (OSHA) vary depending on the specific compound. Overexposure to the vapor of these compounds can cause irritation of the eyes, nose and throat. The liquid if splashed in the eyes, may cause burning irritation and damage. Repeated or prolonged skin contact with the liquid may cause dermatitis. Acute overexposure to chlorinated hydrocarbons depresses the central nervous system exhibiting such symptoms as drowsiness, dizziness, headache, blurred vision, uncoordination, mental confusion, flushed skin, tremors, nausea, vomiting, fatigue and cardiac arrhythmia. Alcohol may make symptoms of overexposure worse. If alcohol has been consumed, the overexposed worker may become flushed. Some of these compounds are considered to be potential human carcinogens. Exposure to *vinyl chloride* is regulated by a comprehensive OSHA standard (29 CFR 1910.1017).

☐ **Chromium Compounds.** Hexavalent chromium compounds, upon contact with the skin can cause ulceration and possibly an allergic reaction. Inhalation of hexavalent chromium dusts is irritating and corrosive to the mucous membranes of the upper respiratory tract. Chrome ulcers and chrome dermatitis are common occupational health effects from prolonged and repeated exposure to hexavalent chromium compounds. Acute exposures to hexavalent chromium dusts may cause coughing or wheezing, pain on deep inspiration, tearing, inflammation of the conjunctiva, nasal itch and soreness or ulceration of the nasal septum. Certain forms of hexavalent chromium have been found to cause increased respiratory cancer among workers.

Trivalent chromium compounds (chromic oxide) are generally considered to be of lower toxicity, although dermatitis may occur as a result of direct handling.

☐ **Fuel Oil.** See Petroleum Hydrocarbons (PHC)

☐ **Gasoline.** See BTEX Compounds, and Tetraethyl and Tetramethyl Lead.

☐ **Herbicides.** Some of the commonly used herbicides present a low toxicity to man. However, other herbicides pose more serious problems. Organophosphorus and carbamate herbicides, if inhaled or ingested can interfere with the functioning of the central nervous system. Many herbicides can be readily absorbed through the skin to cause systemic effects. In addition to being absorbed through the skin, many herbicides, upon contact with the skin, may cause discoloring, skin irritation or dermatitis. Contaminants of commercial preparations of chlorinated phenoxy herbicides such as 2,4,5-T include 2,3,7,8-tetrachlorodibenzo-p-dioxin (dioxin). Dioxin is a known mutagen and a suspect carcinogen.

☐ **Hydrogen Sulfide (H_2S).** Hydrogen sulfide, characterized by its "rotten egg" odor, is produced by the decomposition of sulfur-containing organic matter. It is found in many of the same areas where methane is found such as landfills, swamps, sewers and sewer treatment facilities. An important characteristic of H_2S is its ability to cause a decrease in ones ability to detect its presence by smell. So although one may no longer be able to smell it, it could still be present in harmful concentrations.

The symptoms of over exposure include headache, dizziness, staggering and nausea. Severe over exposure can cause respiratory failure, coma, and death. The current OSHA PEL is 10 ppm as an 8-hour TWA. The ACGIH TLV is the same.

☐ **Lead Paint.** The inspection and/or removal, sanding, grinding, etc. of lead-based or lead-containing paints is now strictly regulated by OSHA. States may require individuals who conduct lead paint inspections or collect samples of lead paint to be licensed or certified. ECS employees must determine the applicability of these regulations prior to any activities involving lead paint. For additional health information, see Metal Compounds.

☐ **Metal Compounds.** Overexposure to metal compounds has been associated with a variety of local and systemic health hazards, both acute and chronic in nature, with chronic effects being most significant. Direct contact with the dusts of some metal compounds can result in contact or allergic dermatitis. Repeated contact with arsenic compounds may result in hyperpigmentation. Cases of skin cancer due to the trivalent inorganic arsenic compounds have been documented. The moist mucous membranes, particularly the conjunctivae, are most sensitive to the irritating effects of arsenic. Copper particles embedded in the eye result in a pronounced foreign body reaction with a characteristic discoloration of eye tissue.

Inhalation of copper and zinc dusts and fumes above their established PELs may result in flu-like symptoms known as "metal fume fever." Prolonged and repeated inhalation of the dusts of inorganic arsenic compounds above the established PEL may result in weakness, loss of

appetite, a sense of heaviness in the stomach and vomiting. Respiratory problems such as cough, hoarseness and chest pain usually precede the gastrointestinal problems. Chronic overexposure to the dusts of inorganic arsenic may result in lung cancer.

The early symptoms of lead poisoning are usually nonspecific. Symptoms include sleep disturbances, decreased physical fitness, headache, decreased appetite and abdominal pains. Chronic overexposure may result in severe colic and severe abdominal cramping. The central nervous system (CNS) may also be adversely effected when lead is either inhaled or ingested in large quantities for extended periods of time. The peripheral nerve is usually affected. "Wrist drop" is peculiar to such CNS damage. Lead has also been characterized as a male and female reproductive toxin as well as a fetotoxin. Exposure to lead (Pb) is regulated by a comprehensive OSHA standard (29 CFR 1910.1025).

☐ **Methane**. Methane is an odorless, colorless, tasteless, gas that cannot be detected by an H-Nu or similar photoionizing detector (PID). When present in high concentrations in air, methane acts primarily as a simple asphyxiant without other significant physiologic effects. Simple asphyxiants dilute or displace oxygen below that required to maintain blood levels sufficient for normal tissue respiration.

Methane has a lower explosive limit (LEL) of 5 percent and an upper explosive limit (UEL) of 15 percent. The LEL of a substance is the minimum concentration of gas or vapor in air below which the substance will not burn when exposed to a source of ignition. This concentration is expressed in percent by volume. Below this concentration, the mixture is "too lean" to burn or explode. The UEL of a substance is the maximum concentration of gas or vapor in air above which the substance will not burn when exposed to a source of ignition. Above this concentration, the mixture is "too rich" to burn or explode. The explosive range is the range of concentrations between the LEL and UEL where the gas-air mixture will support combustion. For methane this range is 5 to 15 percent.

☐ **Pesticides**. Pesticides can be grouped into three major categories: organophosphates, carbamate and chlorinated hydrocarbons. The actual permissible exposure limits (PELs) as set by the Occupational Safety and Health Administration (OSHA), vary depending on the specific compound. Organophosphates, including Diazinon, Malathion and Parathion, are quickly absorbed into the body by inhalation, ingestion and direct skin contact. The symptoms of exposure include headache, fatigue, dizziness, blurred vision, sweating, cramps, nausea and vomiting. More severe symptoms can include tightness of the chest, muscle spasms, seizures and unconsciousness. It should also be noted that the Malathion and Parathion PELs both carry the *Skin* notation, indicating that these compounds adversely effect or penetrate the skin. OSHA specifies that skin exposure to substances carrying this designation be prevent or reduced through the use of the appropriate personal protective equipment (PPE).

Chlorinated Hydrocarbons such as Chlordane, DDT and Heptachlor can cause dizziness, nausea, abdominal pain and vomiting. The more severe symptoms include epileptic like seizures, rapid heart beat, coma and death. These compounds also carry the OSHA *Skin* notation. The symptoms of exposure to carbamate such Carbaryl (also known as Sevin) are similar to those described for the organophosphates. However, the OSHA exposure limit for Carbaryl *does not* carry the Skin notation.

☐ **Petroleum Hydrocarbons (PHCs)**. Petroleum Hydrocarbons such as fuel oil are generally considered to be of low toxicity. Recommended airborne exposure limits have not been established for these vapors. However, inhalation of low concentrations of the vapor may cause mucous membrane irritation. Inhalation of high concentrations of the vapor may cause pulmonary edema. Repeated or prolonged direct skin contact with the oil may produce skin irritation as a result of defatting. Protective measures, such as the wearing of chemically resistant gloves, to minimize contact are addressed elsewhere in this plan. Because of the relatively low vapor pressures associated with PHCs, an inhalation hazard in the outdoor environment is not likely.

☐ **Polychlorinated Biphenyls (PCBs)**. Prolonged skin contact with PCBs may cause the formation of comedones, sebaceous cysts, and/or pustules (a condition known as chloracne). PCBs are considered to be suspect carcinogens and may also cause reproductive damage.

The OSHA permissible exposure limits (PELs) for PCBs are as follows:

Compound	*PEL (8-hour time-weighted average)*
Chlorodiphenyl (42% Chlorine)	1 mg/m^3-Skin
Chlorodiphenyl (54% Chlorine)	0.5 mg/m^3 -Skin

It should be noted that PCBs have extremely low vapor pressures (0.001 mm Hg @ 42% Chlorine and 0.00006 mm Hg @ 54% Chlorine). This makes it unlikely that any significant vapor concentration (i.e., exposures above the OSHA PEL) will be created in the ambient environment. This minimizes the potential for any health hazards to arise due to inhalation unless the source is heated or generates an airborne mist. If generated, vapor or mists above the PEL may cause irritation of the eyes, nose, and throat. The exposure limits noted above are considered low enough to prevent systemic effects but it is not known if these levels will prevent local effects. It should also be noted that both PELs carry the *Skin* notation, indicating that these compounds adversely effect or penetrate the skin. OSHA specifies that skin exposure to substances carrying this designation be prevented or reduced through the use of the appropriate personal protective equipment (PPE).

☒ **Polycyclic Aromatic Hydrocarbons (PAHs)**. Due to the relatively low vapor pressure of PAH compounds, vapor hazards at ambient temperatures are not expected to occur. However, if site conditions are dry, the generation of contaminated dusts may pose a potential inhalation hazard. Therefore dust levels should be controlled with wetting if necessary. Repeated contact with certain PAH compounds has been associated with the development of skin cancer. Contact of PAH compounds with the skin may cause photosensitization of the skin, producing skin burns after subsequent exposure to ultraviolet radiation. Protective measures, such as the wearing of chemically resistant gloves, are appropriate when handling PAH contaminated materials.

☐ **Tetraethyl and Tetramethyl Lead.** Both compounds are used as anti-knock ingredients in gasoline. The inhalation of tetraethyl lead dusts may result in irritation of the respiratory tract. This dust, when in contact with moist skin or eye membranes, may cause itching, burning and transient redness.

The direct absorption of a sufficient quantity of tetraethyl lead, whether briefly at a high rate, or for prolonged periods at a low rate, may cause acute intoxication of the central nervous system. Mild degrees of intoxication may cause headache, anxiety, insomnia, nervous excitation and minor gastrointestinal disturbances.

☐ **Volatile Organic Compounds (VOCs).** See BTEX compounds and Chlorinated Organic Compounds.

☐ **Waste Oil.** See Petroleum Hydrocarbons (PHCs) and Cutting Oil.

HAZARD ASSESSMENT: BIOLOGICAL HAZARDS AND RELATED CONCERNS

☒ **Insects.** Insects represent significant sources (vectors) of disease transmission. Therefore, precautions to avoid or minimize potential contact should be considered prior to all field activities. Disease or harmful effects can be transmitted through bites, stings or through direct contact with insects or through ingestion of foods contaminated by certain insects. Examples of disease transmitted by insect bites include encephalitis and malaria from contaminated mosquitoes, lyme disease and spotted fever from contaminated ticks. Stinging insects, such as bees and wasps, are prevalent throughout the country, particularly during the warmer months. The stings of these insects can be painful, and cause serious allergic reactions to some individuals.

☒ **Lyme Disease.** Lyme disease is an infection caused by the bite of certain ticks, primarily deer, dog and wood ticks. The symptoms of Lyme disease usually start out as a skin rash then progress to more serious symptoms. The more serious symptoms can include lesions, headaches, arthritis and permanent damage to the neurological system. If detected early the disease can be treated successfully with antibiotics. The following steps are recommended for prevention of lyme disease and other diseases transmitted by ticks: a) Beware of tall grass, bushes, woods and other areas where ticks may live; b) *Wear good shoes, long pants tucked into socks, a shirt with a snug collar, good cuffs around the wrists and tails tucked into the pants. Insect/tick repellents may also be useful*; c) *Carefully monitor for the presence of ticks. Carefully inspect clothes and skin when undressing. If a tick is attached to the skin it should be removed with fine tipped tweezers. You should be alert for early symptoms over the next month or so. If you suspect that you have been bitten by a tick you should contact a physician for medical advice.*

☐ **Medical Wastes and Bloodborne Diseases.** Any field activity where exposure to medical wastes or other sources of bloodborne pathogens, including first aid, can be reasonably anticipated must be conducted in accordance with the OSHA (29 CFR 1910.1030) *Bloodborne Pathogens* standard. According to the OSHA definition, Bloodborne Pathogens means pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include but are not limited to *hepatitis B virus (HBV) and human immunodeficiency virus (HIV)*. Wherever there is a potential for employee skin, eye, mucous membrane, or parenteral (skin or membrane piercing) contact with blood or other potentially infectious sources, *employees must refer to the ECS Written Exposure Control Plan.*

☐ **Poisonous Plants.** The possible presence of poisonous plants should be anticipated for field activities in wooded or heavily vegetated areas. *Poison ivy* is a climbing plant with alternate green to red leaves (arranged in threes) and white berries. *Poison oak* is similar to poison ivy and *sumac* but its leaves are oak-like in form. The leaves of these poisonous plants produce an irritating oil which causes an intensely itching skin rash and characteristic blister-like lesions. Contact with these plants should be avoided.

☒ **Rats, Snakes and Other Vermin.** Certain animals, particularly those that feed on garbage and other wastes, can represent significant sources (vectors) of disease transmission. Therefore, precautions to avoid or minimize potential contact with (biting) animals (such as rats) or animal waste (such as pigeon droppings) should be considered prior to all field activities. Rats, snakes and other wild animals can inflict painful bites. The bites can poisonous (as in the case of some snakes), or disease causing (as in the case of rabid animals). Avoidance of these animals is the best protection.

☐ **Waste Water and Sewage.** Sewage and waste water contaminated with raw, untreated sewage can represent significant sources of bacterial, viral or fungal contamination. Adverse effects, due to contact, can range from mild skin reactions or rashes to life threatening diseases. Diseases are easily transmitted by accidental ingestion or through skin contact, particularly if the skin is broken. Avoidance of direct contact and good personal hygiene are the best protection from these hazards.

MISCELLANEOUS SITE CONTROL PROCEDURES

PLAN SIGN-OFF

(Please sign and date. See page 3 for Acknowledgment and Approval scope.)

SS/PM:_____

HSC:_____

Attachments:	Attachment A	Site Inspection Log
	Attachment B	Health and Safety Briefing/Site Orientation Record/Hazard Communication
	Attachment C	Subcontractor's Statement of Understanding
	Attachment D	Incident Report and/or Discovery of a Potential Hazard

Attach additional information if required.

(Revised 9/97)

Attachment A
Site Inspection Log

PROJECT NAME:	LOCATION:
PROJECT NUMBER:	DATE:
PROJECT MANAGER:	COMPLETED BY:
SITE DESCRIPTION AND NATURE OF WORK:	

HAZARD COMMUNICATION
[ ]Chemical hazards identified
[ ]All containers properly labeled
[ ]MSDS/workplace notebook on site
[ ]Site safety briefing completed and documented

ACCIDENTS/EMERGENCY INFO
[ ]First aid personnel identified
[ ]Hospital location identified
[ ]Police/Fire/Ambulance phone numbers available
[ ]Incident investigation forms available
[ ]Fire extinguisher present

SANITATION
[ ]Washing facilities available
[ ]Toilet facilities available
[ ]Approved trash receptacle available
[ ]Water/refreshments available

STORAGE
[ ]Tools/Drill tooling/supplies safely stacked to prevent rolling or collapse
[ ]Work areas and passage ways kept clear

HOUSEKEEPING
[ ]Work areas clean and orderly
[ ]Storage areas clean and orderly
[ ]Combustible scrap/debris removed regularly
[ ]Waste containers of flammable or toxic materials covered

OVERHEAD HAZARDS
[ ]15^{ft} minimum clearance maintained
[ ]All sources of falling objects/swinging loads/ rotating equipment identified
[ ]Barriers or other methods in place to prevent injury due to overhead hazards

POSTING
[ ]Emergency phone/contact info posted
[ ]OSHA poster displayed

UNDERGROUND HAZARDS
[ ]All underground hazards identified and communicated to workers on site
[ ]Utility/Dig-Safe clearance confirmed
[ ]Clearance dates: _____
[ ]Clearance ID#: _____

EXCAVATIONS and TRENCHES
[ ]All personnel and storage at least 2^{ft} from top edge of excavation
[ ]Ladder in place
[ ]Guarding/barriers in place

VEHICULAR TRAFFIC
[ ]All vehicular traffic routes which could impact worker safety identified and communicated
[ ]Barriers or other methods established to prevent injury from moving vehicles

PEDESTRIAN TRAFFIC/SITE CONTROL
[ ]All walkways which could be impacted by site activities identified and communicated
[ ]Barriers or other methods established to prevent pedestrian injury from site activities

ENVIRONMENTAL HAZARDS
[ ]Poisonous plants/stinging or biting insects/vermin/sewage/etc. identified and communicated

COMMENTS/OTHER HAZARDS_____

_____
_____
_____
_____
_____
_____

x = OK
NA = Not Applicable

Attachment B
Health and Safety Briefing/Site Orientation Record/Hazard Communication

This is to verify that I, the undersigned, have been provided with a site (orientation) briefing, including hazard communication, regarding the safety and health considerations at _____. I agree to abide by my employer's site-specific safety and health plan and other safety or health requirements applicable to the site.

Name (Print)	Signature	Company	Date

Site (orientation) briefing conducted by: _____ Date:_____

Attachment C
Subcontractor's Statement of Understanding
Regarding Health and Safety Responsibilities

Project Name: _____

Project Number: _____

In accordance with generally accepted practices, each Subcontractor engaged by ECS is responsible for all matters relating to the health and safety of its personnel and equipment in performance of the work. This includes recognition of the potential health and safety hazards associated with the work. ECS will establish a health and safety plan or program (HASP) applicable to its own employees and its own activities on site. ECS will make its HASP available to each subcontractor for informational purposes only. Each subcontractor must establish a HASP applicable to its own employees and its own activities on site.

Subcontractors who use ECS's HASP as a model for their own HASP are responsible for determining its adequacy and applicability to its own employees and its own activities on site. Subcontractors must establish their own HASP applicable to subcontractor employees and/or activities, even if modeled after ECS's HASP and deliver this HASP in clear written form to ECS prior to the initiation of on-site activities. Submittal of the subcontractor's HASP to ECS will be for informational purposes only. Review of the subcontractor's HASP by ECS shall in no way constitute approval or endorsement by ECS of the subcontractor's HASP. It is understood that protective measures specified in the Subcontractor's HASP are minimum requirements for the work.

Subcontractor warrants that all its employees that are permitted to engage in operations that could expose them to hazardous wastes, hazardous substances, or safety or health hazards have obtained the necessary health and safety training and medical surveillance as specified in the applicable provisions of OSHA:

1926.59 Hazard Communication,
1926.52 Occupational Noise Exposure,
1926.103 Respiratory Protection,
1926.65 Hazardous Waste Operations and Emergency Response;

as well as any other applicable portion of the OSHA General Industry (29 CFR 1910) and Construction Industry (29 CFR 1926) Standards. Subcontractor shall provide ECS with evidence of the necessary certification before beginning hazardous waste work subject to OSHA 1926.65 on the project site.

Should ECS become aware of subcontractor activities on site which appear to violate OSHA or other applicable safety regulations or otherwise pose an immediate and serious threat to the safety of ECS employees, subcontractor employees, other individuals on site, or members of the public, ECS may notify the subcontractor verbally and/or in writing regarding the need for corrective action. Failure to comply with either general safety practices or health and safety practices as described above may be grounds for breach and prompt contract termination. The safety requirements of the work as described above apply without regard to time, place, or presence of a ECS representative.

THE PRESENCE OF ECS PERSONNEL ON THE SITE CARRYING OUT PROFESSIONAL ACTIVITIES DOES NOT MEAN THAT ECS UNDERTAKES TO OVERSEE THE SUBCONTRACTOR'S COMPLIANCE RESPONSIBILITIES.

The undersigned agrees that he is authorized to execute this statement of understanding on behalf of their firm:

Firm: _____

Name (Print): _____ Title: _____

Signature: _____ Date: _____

Attachment D
Incident Report And/Or Discovery Of A Potential Hazard

CHECK ALL THAT APPLY: _____Hazard Identified _____Injury/Illness _____Property Damage

Project Name:_____Project Number:_____Today's Date_____

Date and Time Incident Occurred: _____Site Supervisor's Name: _____

1) Describe the incident or potential hazard:_____

_____

_____

2) Machine or tools involved:_____

3) Names of employees involved in incident:_____

4) What personal protective was being worn when incident occurred? _____

5) Please answer the following four questions. For responses marked yes, please elaborate on the lines below.

Was anyone injured? ___Yes ___No Was first aid administered? ___Yes ___No

Was medical treatment sought? ___Yes ___No Was there property damage? ___Yes ___No

_____

_____

6) What steps were taken to prevent a reoccurence?_____

_____

_____

7) What changes in process, procedure, or equipment would you recommend? _____

_____

8) If the report is for an existing or potential hazard, has the entity controlling the hazard or potential hazard bee notified in writing? _____Yes _____No

9) Additional comments_____

_____

Name and signature of person preparing this form_____

Branch Office Manager: Health and Safety Coordinator:

Corporate Director of Health and Safety: Other:

Note:If the space provided on this form is insufficient, provide additional information on separate paper and attach. The completed investigation report

APPENDIX D – CERTIFICATION OF DOCUMENTS

REMEDIATING PARTY DOCUMENT CERTIFICATION STATEMENT (.0306(b)(2)):

"I certify under penalty of law that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this certification, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material and information contained herein is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for willfully submitting false, inaccurate or incomplete information."

Stephen E. Pike
(Name of Remediating Party Official)

*[signature]
(Signature of Remediating Party Official)

* 2/26/2010
Date

North Carolina (Enter State)

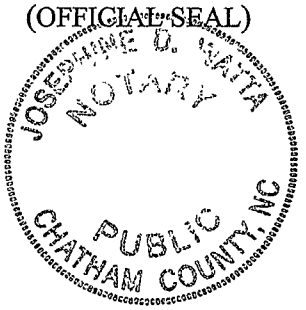
Orange **COUNTY**

I, Josephine D. Watta, a Notary Public of said County and State, do hereby certify that Stephen E. Pike did personally appear and sign before me this day, produced proper identification in the form of NCDL, was duly sworn or affirmed, and declared that, to the best of his or her knowledge and belief, after thorough investigation, the information contained in the above certification is true and accurate, and he or she then signed this Certification in my presence.

WITNESS my hand and official seal this 26 day of February, 2010.

Josephine D. Watta
Notary Public (signature)

(OFFICIAL SEAL)



My commission expires: 4-2-2011

REGISTERED SITE MANAGER DOCUMENT CERTIFICATION STATEMENT (.0306(b)(1)):

"I certify under penalty of law that I am personally familiar with the information contained in this submittal, including any and all supporting documents accompanying this certification, and that the material and information contained herein is, to the best of my knowledge and belief, true, accurate and complete and complies with the Inactive Hazardous Sites Response Act G.S. 130A-310, et seq, and the remedial action program Rules 15A NCAC 13C .0300. I am aware that there are significant penalties for willfully submitting false, inaccurate or incomplete information."

Stephen J. Gosselin
(Name of Registered Site Manager)

* _____ * 3/8/10
(Signature of Registered Site Manager) Date

North Carolina (Enter State)

Mecklenburg **COUNTY**

I, Alissa Allman, a Notary Public of said County and State, do hereby certify that Stephen J. Gosselin did personally appear and sign before me this day, produced proper identification in the form of drivers license, was duly sworn or affirmed, and declared that, he or she is the duly authorized environmental consultant of the remediating party of the property referenced above and that, to the best of his or her knowledge and belief, after thorough investigation, the information contained in the above certification is true and accurate, and he or she then signed this Certification in my presence.

WITNESS my hand and official seal this 8th day of March, 2010.

Alissa Allman
Notary Public (signature)

(OFFICIAL SEAL)

ALISSA ALLMAN NOTARY PUBLIC MECKLENBURG COUNTY, N. C.

My commission expires: 3/13/2013.

Document Certification Form No. DC - II

ECS CAROLINAS, LLP.
7211 Ogden Business Park, Suite 201
Wilmington, NC 28411
(910) 686-9114 • Fax (910) 686-9666